

III. Experimental Studies in the Treatment of Infected Wounds. By Dr. MESSNER (Munich). Messner experimented with twenty-three rabbits to find how practicable it was to disinfect wounds which had been infected with fresh pus, or with pure cultures of pyogenic bacteria, by irrigation with 3-per-cent. lysol or carbolic solution.

He experimented always with two animals of the same litter, and similar in size, color, and weight. Both animals were infected in the same manner. A wound two centimetres long was made in the fleshy part of the front leg through the skin, fascia, and muscle. Into this wound two cubic centimetres of pus or bouillon pus culture was introduced, and the whole covered with a dry aseptic dressing. At the end of a given time—up to eighteen hours after the infection—the bandages were removed from each animal, and one of the wounds washed out with $\frac{3}{4}$ -per-cent. sterilized salt solution, and again covered with a dry aseptic dressing. The wound in the other animal was washed out in a similar way with 3-per-cent. lysol or carbolic solution at 37° F. The disinfected wound was then loosely packed with wet carbolized gauze, and about the whole a wet carbolic dressing was applied, which was renewed after twelve hours. After that the wound was dressed with dry aseptic dressings. As a result of these experiments, of the ten rabbits treated aseptically all but one died, in from eight to fourteen days, of extensive phlegmonous suppuration; while of the ten animals treated antiseptically, all but one recovered. In two of the antiseptically treated cases the wounds healed without suppuration. Moderate suppuration occurred in the others, and was entirely limited to the narrow area immediately about the wound. But one of these animals had an extensive phlegmonous process. Further inoculations were made with the pus from the two sets of animals; and the one was found highly virulent, while the latter had entirely lost its virulence. All of the animals which were inoculated with the pus from the aseptically-treated wounds perished in from twenty-four to forty-eight hours, while those inoculated from the antiseptic wounds all lived.

From these experiments it may be concluded that it is possible in rabbits to disinfect septic wounds, eighteen hours old, by washing out with 3-per-cent. lysol or carbolic solution, and thereby give the suppuration a local character and save the life of the animal.

A second series of experiments made by Messner have shown that the use of 3-per-cent. carbolic solution neither diminishes the resisting power of the tissues against pyogenic cocci nor predisposes them to suppuration. He repeated, with some modification, the experiments of Hermann, using instead of 3-per-cent. carbolic solution a .75-per-cent. sterilized oil solution. This was injected under the skin of the back of a rabbit; and after one hour this was followed by one cubic centimetre of a pure bouillon culture of staphylococcus albus two days old, of which at least one cubic centimetre is necessary to produce suppuration in a rabbit. In the animals treated with the $\frac{3}{4}$ -per-cent. solution of salt, suppuration occurred just as in Hermann's cases, when 0.1 cubic centimetre of staphylococcus culture was injected. A second experiment established the correctness of the first, for in both control animals no abscess occurred. It is therefore not the carbolic acid which predisposes the tissue to suppuration, but the saturation of the tissues with an entirely indifferent fluid.

Two further experiments were made upon rabbits to show that 3-per-cent. carbolic acid did not diminish the vitality of the tissues against pus-organisms. Messner made a wound in the muscle of the front leg of a rabbit, irrigated it with carbolic solution, packed it with wet carbolized gauze, and applied a wet carbolic dressing. Eighteen hours later the dressings were removed, the wound infected with a bouillon culture of pus-cocci, and covered with a dry aseptic dressing. The control animal was treated in the same manner except that the wound was not treated with carbolic solution. At the end of ten hours the dressings were removed from both animals. The wound of the control animal was washed out with $\frac{3}{4}$ -per-cent. salt solution, and a dry aseptic dressing applied; while the wound of the experimental animal was irrigated with 3-per-cent. carbolic solution,

and dressed with dry aseptic materials. This last animal continued to live, the wound healing in three weeks with some slight suppuration. The control animal died eleven days after the infection with an extensive phlegmonous process, and suppuration in the knee-joint. The same experiment was performed upon a second pair of rabbits, with exactly the same result.

From these observations it may be concluded that the treatment or irrigation of the tissues with 3-per-cent. carbolic solution, as was the practice of surgeons in the antiseptic era, in nowise diminishes the vital energy of the tissues against pyogenic cocci, or predisposes the tissues to suppuration; in fact, from the above experiments, the very opposite seems to be the case.—*Verhandlungen der deutschen Gesellschaft für Chirurgie*, XXIII Kongress, 1894.

IV. The Spreading of Suppurative Diseases in Closed Institutions. By Dr. C. REGER. This author, who has for many years busied himself with the study of epidemics, and who has appeared before many scientific bodies with his studies of the dissemination of various infectious diseases based upon a large amount of material, has in this paper presented a vast table dealing especially with the suppurative diseases from the very beginning of their course.

First are given the typical cases of (*a*) measles, rōtheln, and varicella, and (*b*) diphtheria, scarlatina, influenza, pneumonia, erysipelas, and conjunctivitis. He shows with these examples that notwithstanding the immediate isolation of the initial cases, they were followed in the course of time by another outbreak, after which came another pause followed by another outbreak in regular intervals. Consequently the spreading of the disease can only take place by a changing of the host, and consequently the living man is essential for a continuation of the disease, for it is not contagious during the period of incubation, but becomes contagious when the micro-organisms reach their full development. Therefore, the rooms and utensils used about the patient are matters of but little importance in the transmission of these diseases.

While it can be shown that in the first-named group of specific